

List of Publications

Refereed Journal Papers:

1. Ulrich, S., and **Sasiadek, J.Z.** “On the Simple Adaptive Control of Flexible-Joint Space Manipulators with Uncertainties”, *Aerospace Robotics II, Springer Series on GeoPlanet: Earth and Planetary Sciences*, Springer-Verlag, 2014, ISBN 978-3-319-138-527, pgs 13-24
2. Neculescu, D, Pruner, E., **Sasiadek, J.Z.**, „Self-organizing robot formations using velocity potential fields commands for material transfer”, *Production & Manufacturing Research Journal, Vol. 2, No 1*, September, 2014, pgs 676-696, Taylor & Francis Publishing Group, **DOI:10.1080/21693277.2014.943433**
3. Banaszkiwicz, M, **Sasiadek, J.Z.**, “Aerospace Robotics-Preface”, *Aerospace Robotics II, Springer Series on GeoPlanet: Earth and Planetary Sciences*, Springer-Verlag, 2014, ISBN 978-3-319-138-527
4. Ulrich S., **Sasiadek J. Z.**, and Barkana I,, “Nonlinear Adaptive Output Feedback Control of Flexible-Joint Manipulators with Uncertainties,” *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 37, No 6, 2014, pgs 1961-1975
5. Ulrich S. and **Sasiadek J. Z.**, “Decentralized Simple Adaptive Control of Nonlinear Systems,” *International Journal of Adaptive Control and Signal Processing*, Vol. 28, No.4, 2014, pgs 750-763, DOI: 10.1002/acs.2446
6. **Sasiadek, J.Z.** , “Space Robotics and its Challenges”, *Aerospace Robotics, Springer Series on GeoPlanet: Earth and Planetary Sciences*, Springer-Verlag, 2013, ISBN 978-3-642-34019-2, pp.4-12
7. Banaszkiwicz, M, **Sasiadek, J.Z.**, “Aerospace Robotics-Preface”, *Aerospace Robotics, Springer Series on GeoPlanet: Earth and Planetary Sciences*, Springer-Verlag, 2013, ISBN 978-3-642-34019-2, pp.2-3
8. Jaroszewicz, A., **Sasiadek, J.Z.** , Sibilski, K., “Modelling and Simulation of Flapping Wings Entomopter of Martian Atmosphere”, *Aerospace Robotics, Springer Series on GeoPlanet: Earth and Planetary Sciences*, Springer-Verlag, 2013, ISBN 978-3-642-34019-2, pp.136-154
9. Ulrich, S., and **Sasiadek, J. Z.**, "Direct Adaptive Fuzzy Control of a Manipulator with Elastic Joints," *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 36, No. 1, 2013, pp. 311-319
10. Ulrich, S., **Sasiadek, J.Z.**, Barkana, I., “Modeling and Direct Adaptive Control of Flexible Joint Manipulators”, *AIAA Journal of Guidance, Dynamics, and Control*, Vol. 35, No. 1, 2012, pp. 25-39
11. Ulrich, S., **Sasiadek, J.Z.**, ``Trajectory Tracking Control of Flexible Joint Space Manipulators`` (CASJ-2010-0025), *Canadian Aeronautics and Space Journal*, Vol. 58, No. 1, 2012, pp. 47-59.
12. Ulrich, S., **Sasiadek, J.Z.**, “Real-Time Estimation and Adaptive Control of Flexible Joint Space Manipulators”, *Robot Motion and Control, Springer Lecture Notes in Control and Information Sciences (LUNCIS)*, Springer-Verlag, Vol. 442, 2012, ISBN 978-1-4471-2342-2, pp.215-224.

13. Lu, Y., Polotski, V., **Sasiadek, J.Z.**, “ Mobile robot localization in environment with repetitive geometry, using particle filtering with range data association”, *Robot Motion and Control, Springer Lecture Notes in Control and Information Sciences (LUNCIS)*, Springer, June 2009
14. Kepka, M, Neculescu, D., **Sasiadek, J.Z.**, “Kinematics based Control of Autonomous Vehicles Formation”, *IEEE Transaction on Industrial Electronics*, August 2008
15. **Sasiadek, J.Z.**, Monjazez, A., Neculescu, D., “Navigation of an Autonomous Mobile Robot using FastSLAM”, *Journal of Intelligent Systems and Robotics*, 2008
16. Neculescu, D., Zhang, W, and Weiss, W., **Sasiadek, J. Z.**, “Room Acoustics Measurement System Design using Simulation and Experimental Studies”, *IEEE Transaction on Instrumentation and Measurements*, IM-606, Vol. 58, No.1, January 2009
17. Wen, K., Neculescu, D., Weiss, W., **Sasiadek, J.Z.**, “Haptic Force Control based on Impedance / Admittance Control Aided by Visual Feedback”, *International Journal of Multimedia Applications*, No.3, March, 2008.
18. **Sasiadek, J.Z.**, Lu, Y. and Polotski, V., „Navigation of Autonomous Mobile Robots” – invited paper, *Robot Motion and Control, Springer Lecture Notes in Control and Information Sciences (LUNCIS)*, No. 360, pgs 187-208, Springer, 2007
19. **Sasiadek, J.Z.**, Lichota, J., “Identification and Model of Large Output Steam Boiler using Neural Networks”, *International Journal of System Science*, No.11, 2006
20. Lichota J., **Sasiadek J.Z.**, Test signals for NOx emission identification of coal boiler, *Rynek Energii nr 6 (67) 2006*
21. Green, A., **Sasiadek, J.Z.**, “Flexible Robot Trajectory Tracking Control”, *Robot Motion and Control, Springer Lecture Notes in Control and Information Sciences*, Part II, Chapter 10, Springer Verlag, London, 2006, pgs. 150-162
22. **Sasiadek, J.Z.**, Green, A., Optimal Fuzzy Logic Controller for a Flexible Robot, *IEEE Transaction on Control Systems Technology*, No. 2, Vol. 14, March 2006, pp 293-300
23. **Sasiadek, J.Z.**, Bolek, W. “Singularity of the Backstepping Control Design”, *Scientific Bulletin , Technical University of Opole (ISBN 1429-1533)*, No 299/2005, Vol.55 Opole, December 2005, pp 57-71
24. Green, A., **Sasiadek, J.Z.**, “Adaptive Control of a Flexible Robot Using Fuzzy Logic”, *AIAA Journal of Guidance, Control and Dynamics*, No. 1, Vol. 28, January-February 2005, pp. 36-44
25. Kim. B., Neculescu, D., **Sasiadek, J.Z.**, “ Mobile Robot Predictive Control” *International Journal of Control*, No. 16, Vol. 17, December 2004, pp. 1438 - 1445
26. Green, A, **Sasiadek, J. Z.**, “Dynamics and Trajectory Tracking of a Two-Link Robot Manipulator” *Journal of Vibration and Control*, No. 5, 2004
27. **Sasiadek, J.Z.**, Wang, Q., “Low Cost Automation Using INS/GPS Data Fusion for Accurate Positioning”, *Robotica*, Vol.21, No.12, May-June 2003, pp.254-260
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31. **Sasiadek, J.Z.**, "Sensor Fusion", *Annual Reviews in Control, IFAC Journal*, No. 26 (2002), pp. 203-228
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37. **Sasiadek, J.Z.**, Green, D., "Path Tracking, Obstacle Avoidance and Dead Reckoning by an Autonomous Planetary Rover", *International Journal of Vehicle Design*, No. 5, 1998, pp 1-24
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39. **Sasiadek, J.Z.**, "Robotics in Space", A Search for Knowledge & Freedom, Promyk Publishing, Ottawa, 1994, pp. 358-370
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42. **Sasiadek, J.Z.**, Wojcik, P.J., "Adaptive Kalman Filtering: A Simulation Result". *Transactions of ASME Journal of Dynamic Systems Measurement and Control*, March 1988, Vol. 110, No.1.
43. **Sasiadek, J.Z.**, Wojcik, P., "On the Design of a Discrete Kalman for a Tactile Sensor in a Feedback Control System." *International Journal of Control*, Vol. 45, No. 4, 1987, pp. 1211-1228.
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2.2 Other Refereed Papers

47. Yazdkhasti, S. Ulrich, S., and **Sasiadek, J.Z.**, “Experimentation of Stereo Vision-Based Relative Navigation with Unknown Spinning Spacecraft”, *20th IEEE International Conference on Methods and Models in Automation and Robotics*, Miedzyzdroje, Poland, 27 August, 2015
48. Neculescu, D. N., **Sasiadek, J.Z.** “Robot Navigation using Velocity Potential Fields and Particle Filters for Obstacle Avoidance” , *Proceedings of the 11-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Colmar, France, 15-18 July, 2015
49. Monjazez, A, **Sasiadek, J.Z.**, Neculescu, D., “HybridSLAM; A Robust Algorithm for Simultaneous Localization and Mapping”, *Proceedings of the 11-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Colmar, France, 15-18 July, 2015
50. Yazdkhasti, S. Ulrich, S., and **Sasiadek, J.Z.**, “Computer vision for real-time relative navigation with a non-cooperative and spinning target spacecraft”, *ASTRA 13th Symposium on Advanced Space Technologies in Robotics and Automation International*, ESA/ESTEC, Noordwijk, the Netherlands, 11-13 May, 2015
51. Neculescu, D, Rehman, A., **Sasiadek, J.Z.**, “Robotic based fire detection in smart manufacturing facilities”, *IFAC INCOM Conference, Ottawa, Ontario, Canada, 11-14 May, 2015*
52. Neculescu, D.S., Hu. Y., **Sasiadek, J.Z.**, “Human Friendly Autonomous Robot using Dempster-Shafer Sensor Fusion and Velocity Potential Field Control”, *IEEE IMTC 2015*, Pisa, Italy, 5-8 May, 2015
53. Rybus, T., Seweryn, K., **Sasiadek, J.Z.**, “Optimal Detumbling of Defunct Spacecraft using Space Robots”, *19th IEEE International Conference on Methods and Models in Automation and Robotics*, Miedzyzdroje, Poland, 3-6 September, 2014
54. Monjazez, A, **Sasiadek, J.Z.**, Neculescu, D., “Autonomous Mobile Robot using Data Association Scheduling Method”, *Proceedings of the 10-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Vienna, Austria, 1-3 September, 2014, pp.227-238
55. Neculescu, D, Rehman, Adeel ur, **Sasiadek, J.Z.**, “Fire Detection Robot Navigation using Modified Voting Logic”, *Proceedings of the 10-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Vienna, Austria, 1-3 September, 2014, pp.323-335
56. Neculescu, D, Pruner, E., **Sasiadek, J.Z.**, „Self-organizing formations control for a large number of an autonomous mobile robots”, *Proceedings of 2014 IASTED International Conference on Modeling, Identification and Control*, 17-19 February,

2014, Innsbruck, Austria

57. **Sasiadek, J.Z.**, Monjazez, A, and Neculescu, D., "Autonomous Mobile Robot Positioning using Unscented HybridSLAM", *18th IEEE/IFAC International Conference on Methods and Models in Automation and Robotics*, Miedzyzdroje, Poland, 26-29 August, 2013.
58. **Sasiadek J. Z.**, Green A, Ulrich S., and Krzyzak A., "Nonparametric Identification and Control of Flexible-Joint Robot Manipulators," *18th IEEE/IFAC International Conference on Methods and Models in Automation and Robotics*, Miedzyzdroje, Poland, 26-29 August, 2013.
59. Ulrich S., **Sasiadek J. Z.**, and Barkana I., "Nonlinear Adaptive Output Feedback Control of Flexible-Joint Space Robot Manipulators," *AIAA Guidance, Navigation, and Control Conference*, Boston, MA, 19-22 Aug, 2013.
60. Monjazez, A, **Sasiadek, J.Z.**, Neculescu, D., "Some Aspects of Autonomous robot Navigation with Unscented HybridSLAM", *Proceedings of the 9-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Reykjavik, Iceland, 25-28 July, 2013, pp.221-225
61. Neculescu, D, Pruner, E., **Sasiadek, J.Z.**, „Control of Decentralized Formations of Mobile Robots in Crowded Environments” *2013 IEEE Robot Motion Control (RoMoCo2011) Conference*, Wasowo, 3-5 July 2013
62. Ulrich S. and **Sasiadek J. Z.**, "Composite Decentralized Simple Adaptive Control of Flexible-Joint Space Robots with Uncertainties," *2nd Aerospace Robotics Conference*, Warsaw, Poland, 1-2 Jul, 2013.
63. Neculescu, D, Pruner, E., **Sasiadek, J.Z.**, „Control of Self-Organizing Formations Autonomous Agents using Velocity Potential Fields for Material Transfer”, *Proceedings of IFAC Intelligent Manufacturing Systems Conference*, 22-24 May 2014, Sao Paulo, Brazil
64. Ulrich, S., **Sasiadek, J. Z.**, and Barkana, I., "On a New Class of Direct Adaptive Output Feedback Controllers for Nonlinear Square Systems", *2012 IEEE CDC*, Honolulu, Hawaii, USA, 2012
65. Ulrich, S. and **Sasiadek, J. Z.**, "Composite Simple Adaptive Control for Flexible-Joint Space Manipulators with Uncertainties and Modeling Errors," *ASME Dynamic Systems and Control Conference (DSCC/MOVIC 2012)*, Fort Lauderdale Marina, Ft. Lauderdale, FL, USA, 24-27 October 2012.
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67. Neculescu, D, Pruner, E., Kim, B., **Sasiadek, J.Z.**, „Control of Decentralized Geometric Formations of Mobile Robots” *Proceedings of 17-th IEEE/IFAC International Conference on Mathematical Methods in Automation and Robotics (MMAR)*, Miedzyzdroje, Poland, 23-26 August 2012
68. Monjazez, A., **Sasiadek, J.Z.**, Neculescu, D.N, "An Approach to Autonomous Navigation based on Unscented Hybrid SLAM", *Proceedings of 17-th IEEE/IFAC International Conference on Mathematical Methods in Automation and Robotics (MMAR)*, Miedzyzdroje, Poland, 23-26 August 2012
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70. Ulrich, S. and **Sasiadek, J. Z.**, "Direct Fuzzy Adaptive Control of a Manipulator with Flexible Joints," *AIAA Guidance, Navigation, and Control Conference*, Minneapolis, Minnesota, 13-16 August, 2012
 71. Sasiadek, J.Z., "Space Robotics" – Invited Plenary Lecture, *Proceedings of the 9-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Rome, Italy, 27-30 July 2012
 72. Monjazez, A., **Sasiadek, J.Z.**, Necsulescu, D.N, "Autonomous navigation of an outdoor mobile robot in a cluttered environment" , *Proceedings of the 9-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Rome, Italy, 27-30 July 2012
 73. Ulrich, S., **Sasiadek, J. Z.**, and Barkana, I., "Decentralized Simple Adaptive Control for Non-square Euler-Lagrange Systems," *2012 American Control Conference*, Montreal, Canada, 27-29 June, 2012.
 74. Polotski, V., **Sasiadek, J.Z.**, "Path-tracking for ground vehicles with bounded steering angle and steering rate - optimal control approach", *2012 American Control Conference*, Montreal, Canada, 27-29 June, 2012.
 75. **Sasiadek, J.Z.**, Walker, M. J. Krzyzak, A., "Feature Matching Problems and Solutions For UAV Navigation in Urban Environments", *Proceedings of 16th IEEE International Conference on Mathematical Methods in Automation and Robotics (MMAR)*, Miedzyzdroje, Poland, 22-25 August 2011
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 78. Ulrich, S., **Sasiadek, J.Z.**, "Methods of Trajectory Tracking for Flexible Joint Space Manipulators" *Proceedings of the 18-th IFAC World Congress, Milano, Italy, 28 August – 2 September, 2011*
 79. Ulrich, S., **Sasiadek, J.Z.**, "Control Strategies for Flexible Joint Manipulators", *Proceeding of the 2011 AIAA Guidance, Navigation and Control Conference*, Portland, Oregon, USA, 8-11 August, 2011
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 82. **Sasiadek, J.Z.**, "Guidance, Navigation, and Control in Space Robotics", *Workshop on Space Robotics*, CBK Polish Space Agency, Warsaw, 8-9 June, 2011 (Invited Plenary Lecture)
 83. Jaroszewicz, A., Sibilski, K., **Sasiadek, J.Z.**, "Modeling and Simulation of Flapping Wings Flying Vehicle Dynamics and Control in Martian Atmosphere", *Workshop on*

- Space Robotics, CBK Polish Space Agency, Warsaw, 8-9 June, 2011
84. Neculescu, D., Zhang, L., **Sasiadek, J.Z.** “Subject-in-the-Loop System, for Auditory Feedback based Voice Retraining”, *Proceedings of 2011 IEEE Int. Symposium on Medical Measurements and Applications, MeMeA*, Bari, May 30-31, 2011, paper A. 1.1.
 85. Ulrich, S., **Sasiadek, J.Z.**, “Methods of Trajectory Tracking for Flexible Joint Space Manipulator”, *Proceedings of the IFAC Aerospace Control Symposium*, Nara, Japan, 6-10 September, 2010
 86. **Sasiadek, J.Z.**, Walker, M. J. Krzyzak, A., “Feature matching for UAV Navigation in Urban Environments”, *Proceedings of 15th IEEE/IFAC International Conference on Mathematical Methods in Automation and Robotics (MMAR)*, Miedzyzdroje, Poland, 23-26 August 2010
 87. Neculescu, D., Pruner, E., **Sasiadek, J.Z.**, Kim, B., „Control of Autonomous Nonholonomic Vehicles and Their Formation”, *Proceedings of 15th IEEE/IFAC International Conference on Mathematical Methods in Automation and Robotics (MMAR)*, Miedzyzdroje, Poland, 23-26 August 2010
 88. Ulrich, S., **Sasiadek, J.Z.**, “Direct Model Reference Adaptive Control of a Flexible Joint Robot”, *Proceeding of the 2010 AIAA Guidance, Navigation and Control Conference*, Toronto, Ontario, Canada, 2-5 August, 2010
 89. Ulrich, S., **Sasiadek, J.Z.**, “Modified Simple Adaptive Control for Two-Link Space Robot”, *Proceedings of the 2010 American Control Conference (ACC 2010)*, Baltimore, MD, USA, 30 June - 02 July 2010, pp. 3654-3659
 90. Neculescu, D., Zhang, L., Pruner, E., **Sasiadek, J.Z.**, “Voice Feedback Control with Subject-in-the-Loop” *Proceedings of the 7-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Funchal, Madeira, Portugal, 15-18 June, 2010, pp.221-225
 91. **Sasiadek, J.Z.**, Walker, M.J., “Feature Detector Performance for UAV Navigation”, *IASTED Modelling, Identification and Control (MIC 2010) Conference*, Innsbruck, Austria, 15-18 February 2010
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 93. **Sasiadek, J. Z.**, “Guidance, Navigation, and Control of Autonomous Vehicles” *IFAC DECOM*, Ohrid, Macedonia, September 2009 (Invited Plenary Lecture)
 94. Krzyzak, A., **Sasiadek, J.Z.**, Green, A., “Identification of nonlinear systems by nonparametric approach with application to control of flexible robot manipulator” *14th IEEE/IFAC International Conference on Mathematical Methods in Automation and Robotics (MMAR)*, Miedzyzdroje, August 2009
 95. Neculescu, D., Weiss, W., Pruner, E., **Sasiadek, J.Z.**, “Subject-in-the Loop Voice Feedback Control”, *Proceedings of the 6-th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, Milano, 2-5 July, 2009
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106. Kepka, M., Necsulescu, D., **Sasiadek, J.Z.**, Kim, B., "Autonomous Vehicle Formation control with Kinematic Constraints", *5th IEEE INDIN Conf*, Vienna, 23-27 July, 2007, pp. 437-442.
107. Lichota J., **Sasiadek J.Z.**, Artificial neural network NOx emission model in large power boiler, *strony 51-60, Systems2006*, vol.11, special issue 1/2
108. Lichota, J., **Sasiadek, J.Z.**, "Neural network model of large steam boiler", *Proceedings of the International Conference on Energy*, Wroclaw, November 2006
109. Sasiadek, J.Z., and Walker, M., "Stability Characteristics of UAV Multi-Vehicle Formations and Swarms", *Proceedings of Unmanned Vehicle Systems*, Montebello, Quebec, 7-10 November 2006
110. **Sasiadek, J.Z.**, Lu, Y., Polotski, V., "Navigation of Autonomous Mobile Robot with Gate Recognition and Crossing", *Proceedings of the 8-th IFAC Symposium on Robot Control (SYROCO'2006)*, Bologna, Italy, 6-8 September 2006
111. **Sasiadek, J.Z.**, Y., Jiang, Necsulescu, D., "Robotic Unmanned Aerial Vehicle Trajectory Tracking Control", *Proceedings of the 8-th IFAC Symposium on Robot Control (SYROCO'2006)*, Bologna, Italy, 6-8 September 2006
112. **Sasiadek, J.Z.**, Lu, Y., Polotski, V., "Navigation of Autonomous Ground Vehicle-Gate Recognition and Crossing", *Proceeding of 2006 RoManSy Conference*, Warsaw, 20-24 June 2006
113. **Sasiadek, J.Z.**, Green, A., "Noncollocated Sensor Effect on Flexible Robot Control and Stability" *Proceedings of 2006 IASTED International Conference on Control and Applications*, Montreal, Canada, 24-26 May 2006

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